UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,709	03/23/2001	Augusto C. Cardoso JR.	B2C00-0001	5964

22835 7590 05/05/2005

A. RICHARD PARK, REG. NO. 41241
PARK, VAUGHAN & FLEMING LLP
2820 FIFTH STREET
DAVIS, CA 95616

EXAMINER	
RYMAN, DANIEL J	
ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/816,709	CARDOSO, AUGUSTO C.	
	Examiner	Art Unit	
	Daniel J. Ryman	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 March 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 and 3*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: ref. 131 (see page 8, line 10-page 9, line 25 and Fig. 1); ref. 402 (see page 12, line 8-page 13, line 5 and Fig. 4); ref. 513, 523, 551, 552, and 557 (see page 13, line 8-page 14, line 21 and Fig. 5); ref. 700, 710, and 722 (see page 15, line 6-page 16, line 3 and Fig. 7); and ref. 800 and 804 (see page 16, lines 6-17 and Fig. 8). Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: on page 8, line 23 "network 120" should be "network 116" in order to comply with Fig. 1.

Appropriate correction is required.

Claim Objections

4. Claims 1 and 13 are objected to because of the following informalities: in line 5 and line 6, respectively, "that converted" should be "that are converted". Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 5, 6, 10, 13, 17, 18, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Malagrino et al. (USPN 6,714,985).

7. Regarding claims 1 and 13, Malagrino discloses a method and apparatus for receiving multiple streams of Internet Protocol (IP) packets that are interleaved together into a single stream of transport packets (fragmented IP packets or fabric frames) (col. 2, lines 6-17 and col. 5, line 49-col. 6, line 24), the method comprising the steps of and the apparatus comprising means for: receiving the single stream of transport packets (col. 7, lines 28-62), wherein the single stream of transport packets includes multiple streams of IP packets that are converted into transport protocol packets (fragmented IP packets or fabric frames) and are then interleaved together into the single stream of transport packets (col. 2, lines 6-17 and col. 5, line 49-col. 6, line 24); using the single stream of transport packets to reassemble IP packets for the multiple streams of IP packets within a single IP packet buffer (col. 3, lines 30-col. 4, line 30) where

information in the packet stream (i.e. addresses and length of packets) is used to reassemble the IP packets (col. 2, lines 19-64 and col. 3, line 57-col. 4, line 30); keeping track of the order in which reassembly is completed for IP packets within the single IP packet buffer (col. 8, lines 44-55 and col. 12, lines 39-44) where each "completed" packet (un-fragmented frame or reassembled frame) is "staged" (queued) upon completion; reading the IP packets out of the single IP packet buffer in the order in which reassembly is completed (col. 8, lines 44-55 and col. 12, lines 39-44); and forwarding the reassembled IP packets to their destinations as specified by IP addresses contained in the IP packets (col. 5, line 49-col. 6, line 24) where the reassembly occurs in an intermediate station such that the reassembled packet is forwarded to its destination.

8. Regarding claims 5 and 17, Malagrino discloses that reassembling the IP packets from the transport packets involves maintaining a write pointer (IDX or PTR) into the single IP packet buffer for each stream of IP packets, wherein each write pointer points to a packet being reassembled for an associated stream of IP packets (col. 4, lines 6-14; col. 9, lines 16-25; col. 9, lines 51-65; col. 10, lines 2-29; and col. 11, lines 1-5).

9. Regarding claims 6 and 18, Malagrino discloses that each write pointer includes: a start pointer that points to the start of a packet being received for the associated stream within the single IP packet buffer (IDX) (col. 4, lines 6-14; col. 9, lines 16-25; col. 9, lines 51-65; col. 10, lines 2-29; and col. 11, lines 1-5); a number of bytes received so far for the packet being received (CLEN) (col. 4, lines 6-14; col. 9, lines 16-25; col. 9, lines 51-65; col. 10, lines 2-29; and col. 11, lines 1-5); and logic that calculates the write pointer from the start pointer and the number of bytes received so far (col. 4, lines 6-14; col. 9, lines 16-25; col. 9, lines 51-65; col. 10, lines 2-29; and col. 11, lines 1-5).

10. Regarding claims 10 and 22, Malagrino discloses that reassembling IP packets involves checking continuity for transport packets to ensure that all transport packets that make up an IP packet are received in sequential order (col. 11, lines 41-60).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 2, 3, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malagrino et al. (USPN 6,714,985) as applied to claims 1 and 13 above, and further in view of Cowger et al. (USPN 6,314,477).

13. Regarding claims 2 and 14, Malagrino does not expressly disclose that keeping track of the order in which reassembly is completed involves maintaining a circular buffer containing pointers to completed IP packets in the single IP packet buffer, wherein a pointer to a completed IP packet is entered into the circular buffer upon completion of the IP packet. However, Malagrino does disclose that the completed packets are queued (col. 8, lines 44-55 and col. 12, lines 39-44) and that pointers are used to keep track of the location of packets in queues (col. 9, lines 16-25; col. 9, lines 51-65; col. 10, lines 2-29; and col. 11, lines 1-5); although Malagrino does not expressly disclose the nuts and bolts of the completed packet queue. Cowger teaches, in a system for reassembling data, keeping track of the order in which completion messages are received by maintaining a circular queue containing pointers to the completed message, wherein a pointer to a completed message is entered into the circular queue (col. 14, lines 60-63 and col.

15, line 44-col. 16, line 23). Examiner takes official notice that it is well known in the art to store the information associated with a queue in a buffer since buffers are well known storage devices. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to keep track of the order in which reassembly is completed by maintaining a circular buffer containing pointers to completed IP packets in the single IP packet buffer, wherein a pointer to a completed IP packet is entered into the circular buffer upon completion of the IP packet since circular buffers are well known buffers for ordering completed messages.

14. Regarding claims 3 and 15, Malagrino in view of Cowger discloses that reading the IP packets out of the single IP packet buffer in the order in which packets are completed involves: advancing a buffer pointer around the circular buffer containing pointers to completed IP packets; and reading the completed IP packets through pointers that are pointed to by the buffer pointer; whereby the completed IP packets are read out of the single IP packet buffer in the order in which they were completed (Cowger: col. 15, line 44-col. 16, line 23).

15. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malagrino et al. (USPN 6,714,985) as applied to claims 1 and 13 above, and further in view of Lakshman et al. (USPN 5,650,993).

16. Regarding claims 4 and 16, Malagrino does not expressly disclose that the single IP packet buffer is organized as a circular buffer, wherein buffers for incoming IP packets are appended to the end of the circular buffer since Malagrino does not disclose the nuts and bolts of the single packet buffer. Lakshman teaches, in a packet communication system, that it is known to implement a buffer of an intermediate node using circular buffers wherein buffers from incoming packets are appended to the end of the circular buffer (col. 14, line 14-65). Thus, it

would have been obvious to one of ordinary skill in the art at the time of the invention to implement a buffer of an intermediate node using circular buffers wherein buffers from incoming packets are appended to the end of the circular buffer since circular buffers are a known type of reception buffer for an intermediate node.

17. Claims 7 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malagrino et al. (USPN 6,714,985) as applied to claims 1 and 13 above, and further in view of Applicant's Admitted Prior Art.

18. Regarding claims 7 and 19, Malagrino discloses that using the single stream of transport packets to reassemble IP packets involves: receiving a transport packet that includes a section of a first IP packet; receiving an additional transport packet that includes a beginning section of a second IP packet; directing the end section of the first IP packet to a first location in the single IP packet buffer where the first IP packet is being reassembled; and directing the beginning section of the second IP packet to a second location in the single IP packet buffer where the second IP packet is being reassembled (col. 3, line 30-col. 4, line 30 and col. 8, lines 16-60). Malagrino does not expressly disclose that the single transport packet that includes an end section of a first IP packet and a beginning section of a second IP packet. Applicant admits as prior art that it is well known to have a single transport packet include an end section of a first IP packet and a beginning section of a second IP packet (Fig. 4 and page 12, line 8-page 13, line 5). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a single transport packet include an end section of a first IP packet and a beginning section of a second IP packet since this is well known in the art.

19. Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malagrino et al. (USPN 6,714,985) as applied to claims 1 and 13 above, and further in view of Eng (USPN 5,963,557).

20. Regarding claims 8 and 20, Malagrino does not expressly disclose that the single stream of transport packets includes MPEG2 transport packets. Eng teaches, in a packet communication system, that MPEG2 transport packets can carry Internet packet segments (col. 13, lines 22-38). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the single stream of transport packets include MPEG2 transport packets since MPEG2 transport packets can be used to carry Internet packet segments.

21. Claims 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malagrino et al. (USPN 6,714,985).

22. Regarding claims 9 and 21, Malagrino does not expressly disclose that reassembling IP packets involves filtering transport packets based upon packet identifiers (PIDs) to filter out transport packets containing data that is not of a specified type for the IP packets. However, Malagrino does disclose that reassembling IP packets involves handling transport packets (fragmented IP packets or fabric frames) based upon packet identifiers (PIDs) (IP identification field) to identify transport packets containing data that is not of a specified type for the IP packets (col. 2, lines 44-57, esp. col. 2, lines 47-52 and col. 11, lines 17-28) where, as broadly defined, the transport packets are grouped according to the type of IP packet since the transport packets are grouped according to same original packet. Malagrino also discloses performing a specific type of filtering on the IP packets (col. 12, lines 16-20) where it is implicit that this is done in order to allow particular packets to be forwarded while others are discarded. Thus, it

would have been obvious to one of ordinary skill in the art at the time of the invention to filter transport packets based upon packet identifiers (PIDs) to filter out transport packets containing data that is not of a specified type for the IP packets in order to allow particular packets to be forwarded while others are discarded.

23. Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malagrino et al. (USPN 6,714,985) as applied to claims 1 and 13 above, and further in view of Onishi et al. (USPN 5,434,863).

24. Regarding claims 11 and 23, Malagrino does not expressly disclose filtering IP packets based upon media access control (MAC) addresses to filter out IP packets that are not directed to an IP destination address on a local network. However, Malagrino does disclose filtering IP packets based upon the layer 4 ports (col. 12, lines 16-20) where it is implicit that this is done in order to allow particular packets to be forwarded while others are discarded. Onishi teaches as prior art, in a switching system, using MAC address filtering in order to determine which packets to forward to another LAN (col. 1, lines 25-43). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to filter IP packets based upon media access control (MAC) addresses to filter out IP packets that are not directed to an IP destination address on a local network.

25. Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malagrino et al. (USPN 6,714,985) as applied to claims 1 and 13 above, and further in view of Birdwell et al. (USPN 6,172,972).

26. Regarding claims 12 and 24, Malagrino does not expressly disclose that the single stream of transport packets is received from a satellite; however, Malagrino does disclose that the single

stream of transport packets is received from a network that limits packets to a smaller size (col. 2, lines 6-17 and col. 5, line 49-col. 6, line 24). Birdwell teaches, in a packet communication system, transmitting IP packets over a satellite system using transport packets (MPT) in order to transmit network data over a satellite system without losing known content (col. 2, line 39-col. 3, line 40). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to receive the single stream of transport packets from a satellite in order to transmit network data over a satellite system without losing known content.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
Art Unit 2665

DJR

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600